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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,596	10/17/2003	Pedro Torres	36202	2098

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EXAMINER

TRINH, THANH TRUC

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 12/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/688,596	Applicant(s) TORRES ET AL.	
	Examiner Thanh-Truc Trinh	Art Unit 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>02/23/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's election of Group I in the reply filed on 10/04/06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Shuto et al (US Patent No. 6471816).

Regarding claim 1, (See Fig. 1 to 6), Shuto et al disclose a solar cell module 1 comprising of a substrate (or a base plate) 10; solar cells 11a, 11b, 11c which were later labeled 21 at the output terminal area connected in series and formed on the substrate 10; conductive paste output terminals (or poles) 20a, 20c run parallel on the left and right edges of the substrate 10 and are used to conduct output from solar cells; metal foils 22 on top of conductive output terminals are specialized to serve as an element of contact portions; holes 28 are perforated through the substrate 10 to the metal foils 22

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after the lamination (See col. 4 lines 38-61 and col. 5 lines 1-4; Fig. 4-5c); lead wires (or conductors) 30 are solder attached to the metal foils 22. (See col. 5 lines 40-43 and Fig. 6).

In addition, claim 1 is a product-by-process claim, therefore it is not limited to the manipulation of the recited steps such as forming the blind hole after the lamination. The determination of patentability is based on the product itself, and not on the method of making the product (MPEP § 2113).

Regarding claim 2, Shuto et al describe metal foils 22 are used as contact portions on the upper side of the power generating film 21 opposite the substrate 10. (See Fig. 2-6). Also, the hole 28 traverses the substrate 10 and the solar cell layer 21. (See Fig. 5b, 6).

Regarding claims 3 and 4, Shuto et al describe that the metal foils 22 are positioned above output terminals 20a and 20c, then attached under pressure and heat to electrically connect. (See col. 4 lines 12-21). Conductive paste output terminals are typically made of binding materials, such as polyimide or phenol based binders, and powder metals such as nickel, silver or aluminum (See col. 7 lines 24-26). Additionally, conductive paste output terminals run substantially the full length and on the right and left sides of the solar cells 11a, 11b, 11c. In other words, metallic bands of combination of output terminals and metal foils run substantially full length and on opposite sides of the power generating film. (See Fig. 1a, 2a, 3a, 4a, 5a). At least a lead wire 30 is solder

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attached to the metal foil 22 through the hole 28 on one side of the power generating film, therefore at least two lead wires (or electric conductors) go through two blind holes for connecting each metallic band. (See Fig. 5a-6 and col. 5 lines 40-43)

Regarding claim 9, Shuto et al disclose a power generating film 21 comprising a plurality of solar battery elements 11a, 11b, 11c. (See Fig. 2a and col. 3 lines 50-52, col. 3 lines 65-66 and col. 4 lines 1-4). In each element, there is at least one silicon layer. These silicon layers are on top of other flexible films such as transparent conductive layer, and on the substrate 10 that is made of polyimide.

Regarding claim 10, Shuto et al teach that transparent protective films 24 and 25 encapsulate over the solar module 1 (or photovoltaic cell) on the front and back, respectively. (See col. 4 lines 38-42). The encapsulation layers are made of organic materials such as ethylene terephthalate (PET) or fluoroplastics. (See col. 4 lines 42-43).

Regarding claim 11, Shuto et al also teach that the blind hole is filled with conductive material, such as conductive paste, to solder attach the lead wire to the contact portion. (See col. 8 lines 37-42).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shuto et al in view of Nagao et al (US Patent No.6670541).

Shuto et al disclose solar cell modules as described in claim 1.

Shuto et al do not specifically teach the base plate is rigid, nor do they teach that the plate comprises one insulator between two layers of metal. Shuto et al also do not teach that the base plate is specifically suitable for covering external building walls.

Nagao et al teach the plate (or back cover) is rigid, possibly made of metal or formed by sandwiching a film between metal layers such as aluminum foils. (See col. 5

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lines 53-55). In addition, the plate is suitable for covering external building walls. (See col. 1 lines 7-8, and Fig. 11, 13A-D, 14).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the module of Shuto et al by applying a rigid base plate comprising an insulator layer between two layers of metal as taught by Nagao et al, because it would provide a superior and effective photovoltaic back over in protecting, reinforcing and preventing hazards from environment. (See Nagao et al, col. 5 lines 49-61).

Conclusion

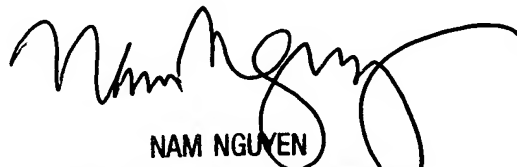
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh-Truc Trinh whose telephone number is 571-272-0991. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TT
11/2/06



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